

THE

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The Speed of Flight in Certain Birds

By D. D. McLEAN

Ofentimes we hear people mention the tremendous speeds which birds are purported to attain while in flight. How easy it is to say that a bird was traveling fifty miles an hour, or maybe a hundred! They do actually seem to be traveling at a tremendous pace and some of them do, unquestionably. However, when we actually time some individual's with a speedometer, we find that many of our estimates are extremely high. One reason for this error is that so many of the species are small and hence their speed is deceiving. Their wings vibrate rapidly so that they appear to be fairly hurling through space.

Some notes that I have unearthed show that many birds are really rather slow in ordinary flight.

Near Richvale, Butte County, California. I paced an Anthony Green Heron for about 400 yards at thirty-four miles per hour. He was traveling in a steady, easy flight about twenty-five feet from the ground, with no wind to help or deter him.

Near the same place I paced a large flock of Tri-colored Blackbirds for about a quarter of a mile at the rapid pace of fifty-two miles per hour. Individual birds of the same species traveled forty-six miles per hour to the nest with food for the young and forty-eight miles per hour on leaving the nest to secure more food.

Near Los Baños, Merced County, a Barn Swallow skimmed low over the pavement in front of the machine at forty-six miles per hour with no apparent effort on its part, while in ordinary flight, about twenty-five feet above the ground, it flew steadily at forty-four miles an hour.

A female Cinnamon Teal, near Richvale, Butte County, flew leisurely alongside of the road at thirty-two miles per hour for about 200 yards, but when I stepped on the gas and caught up with her, she sped up to fifty-nine miles per hour for some distance and finally swung off across a field. A male of the same species near the same place flew steadily at forty-nine miles per hour about thirty feet above the ground.

A Red-shafted Flicker near San Jose, California, flew, when slightly startled, at the rate of forty-three miles per hour. Another of the same species near Oakdale, California, flew forty-four miles per hour under the same conditions.

A Spoon-bill Duck or Shoveler flew steadily at forty-seven miles per hour near Los Baños, Merced County, while another near the same place flew fifty-three miles per hour. The latter may have been going slightly faster than that.

A Western Sandpiper near Dumbarton Bridge, on San Francisco Bay, flew in apparent full, level flight at fifty-two miles per hour, while another, which seemed more steady in balance, traveled forty-four miles per hour.

Five Long-billed Dowitchers near the same place flew steadily at forty-three miles per hour for about 200 yards.

A Savannah Sparrow (apparently Western), when in full flight but not necessarily frightened, flew thirty-seven miles per hour, while a second one that

was hard pressed in front of the machine could do no better than forty-two miles per hour while flying on a level. It had to turn off to the side as soon as I increased my speed. They were both on the Bolsa Road between Gilroy and Hollister.

Killdeer showed a tremendous variation in flight as may be seen from the following. When flying leisurely along one bird made only twenty-eight miles per hour; another, with apparently no more effort, flew thirty-five miles per hour. These two birds were near Los Baños. However, fifty-five miles per hour failed to overtake one near Marysville Buttes that seemed to be playing in the air.

A Belted Kingfisher near Richvale, Butte County, flew along in a steady level flight at thirty-six miles per hour with apparently little effort.

Horned Larks seem to average about thirty-two miles per hour in ordinary flight, but I paced one flock near Panoche Pass at fifty-four miles an hour. These birds were skimming low over the ground.

Of all birds that I have had the opportunity of checking, the palm must go to the Duck Hawk. A certain Duck Hawk was timed on several different occasions over an open field in Mariposa County, while approaching a flock of Robins. The bird was actually traveling in a level course only a few feet above the ground. His average speed of approach was better than 165 miles per hour and the extreme speed attained over this same 400-yard field was 180 miles per hour. This bird was finally secured as a specimen.

I believe that the White-throated Swift is capable of even more speed than the Duck Hawk, but I have yet to secure data on the exact speed attained by this bird.

This study of speed in the flight of birds is extremely interesting and the field has only been lightly touched upon. Aviation will help us in securing more definite information in this regard, as it is only by chance now and then that one is able to secure data while in an automobile and even then the faster flying species cannot be checked properly.

Any information along this line would be greatly appreciated by the author.



California Gulls After the Rain

On the Claremont golf course in Oakland, there were frequently to be seen this autumn a flock of California Gulls, along with Killdeer, Plovers, Pipits and Robins. The Gulls varied in number from around twenty to perhaps fifty or sixty. It was a striking sight, then, to see the green slopes thickly dotted with the vast increase which occurred after the early rains. On the morning of December 12th, after four days of heavy showers, estimates based on several partial counts gave from 1600 to 2000 birds.

Many of those near at hand were industriously feeding,—on what, could not be ascertained, but no earthworms were seen to be picked up during ten minutes watching.

How, one wonders, did it come about that these Gulls assembled at this spot in such unusual numbers, when rain happened to bring abundant food animals to the surface? Such a question has been asked in many instances where an unusually abundant food supply has brought a rapid increase in bird concentration.

The most likely explanation, to my mind, would be based on the assumption that many of these Gulls daily indulge in wide wanderings; that scores, or even hundreds, in the course of a day, either alight for awhile on the Claremont green, or pass within sight of it; that when food is especially abundant most of those that happen along remain and few depart, so that in a few days' time, by the steady addition of a stream of casual wanderers, a large concentration is built up. This should be susceptible of observational confirmation. Herman de Fremery.

Report of Field Trips for 1929

The following report covers the results of the monthly field trips taken by The Audubon Association of the Pacific during the year 1929. Each trip, with one exception, was a day's journey on foot in the San Francisco Bay Region. The trip to the Livermore Valley was made in automobiles.

One trip was taken to each of the following: Baumberg and Dumbarton Bridge, Lake Merritt, McCoy Ranch and Arroyo Mocho in the Livermore Valley, University of California campus and Strawberry Cañon, all in Alameda County; Point Bonita and Tennessee Cove, Marin County; Golden Gate Park, San Francisco; Easton to San Andreas Lake, San Mateo County. Two trips to each of the following: Ross to Fairfax, Marin County and Lake Merced in San Francisco County.

The total number of species observed on all trips was 180, with an average of fifty-four species per trip. The largest number of species observed on any one trip was on the Livermore Valley trip, sixty-six, closely followed by the November trip from Ross to Fairfax by way of Alpine Lake when a list of sixty-five was recorded. Ten new species were added to the Association's records: Horned Grebe, Anthony Green Heron, Western Pigeon Hawk, Ring-necked Pheasant, Glaucous Gull, Pacific Great Horned Owl, Texas Nighthawk, Western Kingbird, Western Purple Martin, Dotted Canyon Wren, Northern Phainopepla.

The following more or less common species are missing from this year's record: Sora Rail, Snowy Plover, Hudsonian Curlew, Long-billed Dowitcher, Heermann Gull, Red-breasted Sapsucker, Cahanis Woodpecker, Rufous-crowned Sparrow.

Some old acquaintances were renewed: Rock Wren not on the records since 1922, White-throated Swift, Rufous Hummingbird and Cedar Waxwings not on the records since 1923, White-tailed Kite, Foster Tern and Barn Owl not on the records since 1924.

Attendance of members averaged thirteen per trip. Forty-eight members attended the trips, one member only attending every trip. Fifteen members attending only one trip each. The most popular trip from point of membership attendance was the Livermore Valley trip, twenty-one members. This was followed closely by the trips to Lake Merritt, Point Bonita and the November trip to Alpine Lake from Ross, each of these trips attracting eighteen members. The most heroic trip was that of December, when five members braved a heavy downpour of rain all day to find thirty-five species of birds.

I wish to thank the members of the Association who so ably assisted with their willing and efficient co-operation to make our trips a success. Chas. A. Bryant, January 9th, 1930.

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Christmas Census for 1929

The Christmas census of the birds was taken on Sunday, December 22nd, from 9 A. M. to 5 P. M., along the Marina, Beach, Presidio, Baker's Beach, Lobos Creek, Golden Gate Park and Lake Merced. The day was clear and calm, average temperature 52°. A total of eighty-three species, 11,352 individuals and 212 English Sparrows were observed.

	Marina to Beach	Golden Gate Park	Lake Merced
Loon (species ?).....	3	.....	2
Eared Grebe .....	.....	5	42
Western Grebe	13	.....	11
Pied-billed Grebe .....	.....	6	28
Brown Pelican	64	.....	5
Farallon Cormorant	59	.....	1
Great Blue Heron.....	.....	1	1
American Bittern .....	.....	1	1
Mallard	16	197	.....
Canvas-back .....	.....	157	50
Lesser Scaup .....	.....	76	51

	Marina to Beach	Golden Gate Park	Lake Merced
Ring-necked Duck	3	12	6
Ruddy Duck	11	98	106
Sharp-shinned Hawk .....	.....	2	1
Desert Sparrow Hawk	1	.....	3
California Quail	4	99	.....
Coot	127	365	42
Glaucous-winged Gull	256+	40	49
Western Gull	1326+	14	113
California Gull	2282+	404	1090
Ring-billed Gull	11	.....	1
Short-billed Gull	46+	.....	25
Anna Hummingbird	18	30	32
Red-shafted Flicker	10	10	8
Black Phoebe	8	4	7
Chestnut-backed Chickadee	9	134	25
Bush-tit	45	104	107
Vigors Bewick Wren	4	7	16
Robin	1	9	6
Varied Thrush .....	.....	2	1
Dwarf Hermit Thrush	5	21	11
Ruby-crowned Kinglet	29	29	15
Pipit	31	.....	5
Audubon Warbler	27	70	75
Yellow-throat	4	3	14
Meadowlark	35	.....	15
Brewer Blackbird	696	.....	5
Linnet	66	2	6
Spotted Towhee	7	12	12
Fox Sparrow	5	26	12
Junco	147	67	7
Golden-crowned Sparrow	103	4	1
Nuttall Sparrow	513+	535	75
Song Sparrow	48	42	65
English Sparrow	57	155	.....

In addition to the above the following birds were observed:

Along Beach, Marina, etc.: Brandt Cormorant 33; Baird Cormorant 1; White-winged Scoter 13; Surf Scoter 11; Pigeon Hawk 1; Snowy Plover 28; Killdeer 2; Ruddy Turnstone 33; Black Turnstone 12; Sanderling 102; Bonaparte Gull 16; Murre 1; Say Phoebe 1; Horned Lark 30; California Jay 1; Savannah Sparrow 1.

In Golden Gate Park: Baldpate 7; Pintail 7; Greater Scaup 4; Buffle-head Duck 6; Kingfisher 1; Willow Downy Woodpecker 2; Red-breasted Nuthatch 2; Winter Wren 1; Hutton Vireo 1; Townsend Warbler 2.

At Lake Merced: Horned Grebe 18; White Pelican 211; Red-breasted Merganser 3; Cooper Hawk 2; Red-tailed Hawk 1; Wilson Snipe 3; Least Sandpiper 2; Burrowing Owl 1; Wren-tit 1; Tule Marsh Wren 13; Myrtle Warbler 7; Pine Siskin 1; Green-backed Goldfinch 1.

Observers: Mr. and Mrs. Bunker, Mr. and Mrs. Stephens, Mr. and Mrs. Thomas; Mrs. Kelly, Kibbe; Misses Ames, Kautz, Payne, Pringle; Messrs. Axelrod, Gordan Bolander, Bremer, Bryant, de Fremery, Jencks, Lockerbie, Myer, Penny, Reed, Carl Smith and Clarence Smith.



Census of Birds' Nests in the Music Concourse, Golden Gate Park, San Francisco, California, for 1929

The abnormal dryness of the fall assured good condition for examination of any nests built in the spring of 1929 in the trees of the Music Concourse in

Golden Gate Park, and the count was made as soon as the first storm had stripped off the leaves, which was about the middle of December.

Of late years the gradual diminishing of the bird population of the park has been painfully apparent to the writer, the year 1929 having shown a particularly great decrease in the number of birds to be found there. Possibly this sudden drop may have largely been due to the dryness of the spring having prevented as much nesting as usual and to the drought in the fall having affected to some extent the southward migrations. Whatever it was that affected the activities of the birds, conditions were such as to lead one to the belief that the number of nests in the grove of trees where a census has been taken for the past decade would be small. This belief was only too well justified.

The highest count made was in 1920, when eighty-nine nests, including even beginnings of nests, were discovered. The next highest was in 1925, with fifty-one nests, and the lowest was in 1927 with nineteen. In 1928 there was a slight rise, with twenty-six nests, but in 1929 the total was reduced to nine. Of the latter, investigation showed that only one brood was raised, three were either robbed or deserted before any eggs were laid; one contained a single unbroken egg; one contained a single broken egg and three had been started but abandoned. One of these last nests was plainly of the English Sparrow type of construction and was built in one of the trees of the row nearest to the handstand. As it was deserted even before being finished, one's surmises as to the reason for abandonment might readily include a want of appreciation on the part of the builders of the efforts of the municipal band. With the exception of one unfinished and deserted nest that seemed as if it might have been either started by a House Finch, or even a Willow Goldfinch, the remainder of the nests discovered were those of Nuttall Sparrows. Joseph Mailliard, California Academy of Science, San Francisco, California.



Report of the President for the Year 1929

It has been a good year for me and I hope for the Audubon Association. I am sure progress has been made in strengthening the organization and position of the Audubon Association of the Pacific and in furthering the very purpose of Audubon: the awakening of a more general and more sympathetic interest in birds and contributing to their study and conservation.

Certainly there is more widespread interest in California in the general subject of birds at the present time than there has ever been before. The contest to elect a State Bird by popular ballot which has been sponsored in the northern part of the State by our Association has been very largely responsible for this. By means of the radio, especially the station KGO of the General Electric Company and NBC, by lectures given by our members and others, by news publicity and work of other organizations such as schools, clubs, fraternal societies, especially the Native Daughters of the Golden West, we have made the word "Bird" a very popular one in the vocabulary of our people. This is fine, but it can only last and be used by being in some way organized by such societies as ours.

Our own organization has been strengthened by an increase in membership and in attendance at meetings during the past year. The decision to continue "The Gull" as a monthly publication is a very healthy sign and the method of arriving at the decision has stimulated new strength.

The reports of our other officers show that the Audubon Association of the Pacific is in very good condition and I am happy to be able to turn the presidency over to my successor when this is so. The fact that all of my spare time and very much more has been given to the State Bird campaign during this year and the added fact that a change of occupation and residence was made during the middle of the year have made it impossible for me to carry out many of the ideas I may have expressed to you last January when I took office. I will tell the new president what they were and offer him and the Association every assistance I can possibly render. Bert Harwell, President.

Record of Votes for California's State Bird

Candidates	Northern California	Southern California	Total
California Quail	32,160	29,399	61,559
Western Bluebird	14,118	4,848	18,966
Bullock Oriole	2,921	8,955	11,876
Anna Hummingbird	4,734	6,234	10,968
California Woodpecker	2,152	3,457	5,609
California Gull	1,484	2,093	3,577
Green-backed Goldfinch	1,220	1,491	2,711
California Condor	1,197	1,325	2,522
Western Tanager	1,462	900	2,362
Roadrunner	704	1,483	2,187
Red-shafted Flicker	766	617	1,383
California Thrasher	869	453	1,322
Western Kingbird	531	396	927
California Purple Finch	420	315	735
Water Ouzel	327	331	658
California Brown Towhee	233	392	625
Audubon Warbler	256	324	580
Desert Sparrow Hawk	293	247	540
Wren-tit	388	133	521
Bush-tit	287	207	494
Dotted Canyon Wren	210	265	475
Russet-backed Thrush	202	171	373
Black-headed Grosbeck	163	159	322
All others	1,392	2,615	4,007
Totals	68,489	66,810	135,299



Commercial Account: Report of Treasurer

Cash on hand January 3rd, 1929..... \$ 23.61

Receipts:

Dues collected for year of 1927.....	\$ 3.00	
Dues collected for year of 1928.....	6.00	
Annual dues for 1929.....	316.00	
Annual dues for 1930.....	21.00	
Subscriptions to "The Gull".....	8.65	
Received for back numbers of "The Gull".....	24.30	
Donations	13.00	391.95

Expenditures:

Regular publication of "The Gull".....	\$216.00	
Additional for February issue.....	19.50	
Stationery and stamps.....	80.46	
Dues, National Association of Audubon Societies.....	5.00	
Refund to Ralph Ellis, Jr.....	.44	
Christmas donation to janitor, 1928.....	5.00	
Christmas donation to janitor, 1929.....	15.00	
Printing ballots for State Bird Campaign.....	50.00	
	\$391.40	

Cash on hand January 1st, 1930..... 24.16 \$415.56

Savings Account:

Balance January 3rd, 1929.....	\$394.17	
1929 Life membership.....	50.00	
Interest on savings account.....	17.08	\$461.25

Balance commercial account January 1st, 1930..... \$ 21.16

Cash on hand January 1st, 1930..... 3.00

Savings account

Membership for 1929—Honorary 10, Life 14 and Active members 112.

Laura A. Stephens, Treasurer.

Audubon Notes

March Meeting will be held on Thursday evening, the 13th, at 8 o'clock, Room 19, 2nd Floor, Ferry Building.

The speaker of the evening will be Mr. Frederic T. Jencks, father of Director F. M. Jencks.

Under the general title "Bird Notes" Mr. Jencks will relate to us some of his bird observations and experiences extending over a period of many years.

Starting out as a young boy collecting eggs, several years later he engaged in the earnest study of birds. At one time he operated a natural history store under the name of Southwick and Jencks, for the sale of bird skins and eggs.

A boyhood chum of John and Robert Ridgeway, he spent one season collecting with the latter and also two seasons with E. W. Nelson.

Mr. Jencks' talk promises to be full of interest to all bird-lovers.



March Field Trip will be taken on Sunday, the 16th, to Point Bonita. This trip affords an excellent opportunity to study many species of both land and water birds. It also affords many beautiful views of the hills, bay and ocean. Route will be along the military road to Fort Baker, then by trail over the hill or along the road through the tunnel to the ocean beach, beyond Rodeo Lagoon, where luncheon will be eaten. After luncheon those, desiring to do so, may visit the lighthouse then return to Sausalito. Busses will be on hand for those who may wish to ride back. Fee 50c.

Purchase round-trip ticket to Sausalito, 25c, and take Sausalito Ferry at 8:15 A. M. Bring luncheon and canteens. Round trip, 12 miles. In case of rain, trip will be held on the Sunday following. Members are privileged to bring guests. Leaders will be chosen after the party assembles.



February Meeting: The 157th regular meeting was held February 13th, in Room 19, Ferry Building, with forty-seven present. President Brighton C. Cain presiding.

Mr. Lastreto read a communication from the National Audubon Association asking our support of a bill, now

before Congress, for the protection of the Bald Eagle.

President Cain read a request from the Parish Workers of Alameda for a member of our Association to address them. Our President pointed out that much good might be derived from responding to requests of this kind and suggested that any members able to assist in such work confer with him.

Publications reported: Lawrence Martin's "Wayside Inn for Birds" was recommended as being particularly interesting to children.

President Cain announced that the Cooper Club, being overstocked with Dawson's "Birds of California," is offering them at half price.

Field observations were reported as follows:

Mr. de Fremery: February 9th, Mt. Diablo, two pairs of Bluebirds inspecting nesting holes.

Mrs. Stephens: January 26th and February 6th, Lake Merced, Florida Gallinule; February 1st, Cliff House, 22 Star Birds and 12 Ruddy Turnstones.

Mr. Bryant: January 1st, 11th, 25th and February 8th, Phoenix Lake, Wood Duck.

Mr. Jencks: February 2nd, Mosswood Park, Black-throated Gray Warbler, and February 3rd, Red-breasted Sapsucker.

Mr. Cain: Week of February 9th to 14th, Boy Scouts' Camp, Oakland, Red-breasted Sapsucker, and at upper end of Lake Temescal in Oakland, three Western Gnatcatchers.

Mr. Vaughan McCaughey, Editor of the "Sierra Educational News," was the speaker of the evening, the title of his address being "Adventures with Birds in Three Lands."

Two bound volumes of notes most carefully written and containing many marginal illustrations and illuminated capitals, all done by hand when a boy of eleven, excited much interest and admiration among Audubon members.

Speaking of the Hawaiian Islands, Mr. McCaughey pointed out that these are of two types: those formed of mountains and those of coral reefs, known as atolls. The former are partially covered with tropical forests and have a rainfall up to 600 inches. Here are found species of birds peculiar

only to these islands and having extremely limited ranges. Half of the species originally found here are now extinct. ☞ ☞ ☞

February Field Trip was taken on Sunday, the 16th. The party left San Francisco by stage at 9 A. M. and arrived at Easton Drive, Burlingame, about half an hour later.

By scouting side streets for a block or so on either side of the Drive and by peering across yards, a list of thirty birds was obtained before leaving the city limits. Continuing up the Drive to the Skyline Boulevard, the party stopped to lunch in a nearby grove; after which they entered the Spring Valley Water Company's property, following the usual route along the flume to San Andreas Dam, thence along the east shore to the watchman's house and on down the road to Uncle Tom's Cabin.

The day was clear and unusually warm.

Several species of resident birds were in full song. Titmice, Chickadees, Bush-tits and Juncos were especially active. One Bush-tit's nest was observed nearing completion. A California Thrasher was heard singing in the ravine east of the dam. Several Hutton Vireos were whistling for mates and Green-backed Goldfinches were telling the old story; an Allen Hummer was observed doing his aerial courting.

Nuttall and Song Sparrows were noticeably scarce, though the Golden-crowns were quite numerous.

On the northwest arm of the lake was a good water bird representation, but only the large Canada Geese—some fifty in number—were distinguishable at that distance. Fortunately mergansers and a few other water birds were closer.

Birds observed were: Western and Pied-billed Grebes; California Great Blue Heron; Honker Canada Goose; Scaup and Ruddy Ducks; American Merganser; Northern Turkey Vulture; Sharp-shinned, Western Red-tailed, Marsh and Desert Sparrow Hawks; California Quail; American Coot; Spotted Sandpiper; Anna and Allen Hummingbirds; Western Belted Kingfisher; Monterey Red-shafted Flicker; Cabanis Hairy and Willow Downy Woodpeckers; Black Phoebe; California Horned Lark; Stellar and California Jays; Santa Cruz Chestnut-backed Chickadee; California Plain Titmouse; Pacific Coast Bush-tit; Intermediate Wren-tit; Vigors Bewick Wren; Sonoma California Thrasher; Western Robin; Coast Varied and Dwarf Hermit Thrushes; Western Mexican Bluebird; Western Ruby-crowned Kinglet; Cedar Waxwing; California Hutton Vireo; Pacific Audubon Warbler; Western Meadowlark; California Brewer Blackbird; English House Sparrow; California Purple Finch; California Linnet; Northern Pine Siskin; Willow American and Green-backed Arkansas Goldfinches; San Francisco Spotted and Brown Towhees; Savannah and Fox Sparrows; Oregon Junco; Golden-, Nuttall White-crowned and Song Sparrows. Fifty-five species and sub-species.

Members present: Mr. and Mrs. Lockerbie, Mr. and Mrs. Stephens; Mrs. Bracelin, Cummings; Misses Ames, Cockefair, Kautz, Paroni, Payne, Pettit; Dr. Card; Messrs. Bryant, Jencks, Myer, James S. Smith. Guests: Mrs. Simkins, Van Dyke; Misses Belvel, Mack, Smith, Stone, Taylor, Walker, Wise; Messrs. Bibbero, Cahen, Kaufner, Reed, Sebastian, Sultan, Susman, Taranik. C. W. Lockerbie, Historian.

Audubon Association of the Pacific

For the Study and Protection of Birds

President.....	Brighton C. Cain.....	221 Thayer Bldg., Oakland
Recording Secretary.....	Mrs. Bessie W. Kibbe.....	Room 510, Russ Bldg., San Francisco
Corresponding Secretary.....	C. B. Lastreto.....	260 California St., San Francisco
Treasurer.....	Mrs. A. B. Stephens.....	1695 Filbert St., San Francisco

Monthly meeting second Thursday, 8 P. M., Room 19, Ferry Building.

Address Bulletin correspondence to Mrs. A. B. Stephens, 1695 Filbert St., San Francisco.
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Members are responsible for dues until written notice of resignation is received by Treasurer.